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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/622,030	07/17/2003	Mamoru Soga	5077-000064/CPA	2257
27572	7590	11/03/2005	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C.			SHOSHO, CALLIE E	
P.O. BOX 828			ART UNIT	PAPER NUMBER
BLOOMFIELD HILLS, MI 48303			1714	

DATE MAILED: 11/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

60

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/622,030	SOGA ET AL.
Examiner	Art Unit	
Callie E. Shosho	1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 09 August 2005.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-9 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_

**DETAILED ACTION**

1. All outstanding rejections except for those described below are overcome by applicants' amendment filed 8/9/05.

The new grounds of rejection set forth below are necessitated by applicants' amendment and thus, the following action is final.

**Claim Rejections - 35 USC § 112**

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

(a) Claims 1, 3-5, and 7-9 have each been amended to recite that the ink contains "an insoluble dye". It is the examiner's position that this phrase fails to satisfy the written description requirement under the cited statute since there does not appear to be a written description requirement of the phrase "an insoluble dye" in the application as originally filed, *In re Wright*, 866 F.2d 422, 9 USPQ2d 1649 (Fed. Cir. 1989) and MPEP 2163.

As support for the above amendment, applicants have pointed to page 4, lines 14-19, page 5, lines 1-3, and page 7, lines 6-11 and 23-25 of the present specification. However, while

the specification provides support for the recitation of “oil-soluble dye”, there is no support for the recitation of “an insoluble dye”. The recitation of “insoluble dye” is broader than the recitation of “oil-soluble dye” and encompasses dyes other than “oil-soluble dye” for which there is no support in the present specification.

(b) Claims 5, 7, and 8 have each been amended to recite that the “amphiphilic heteroarm star polymer has a hydrophobic segment and a hydrophilic segment, and the hydrophilic segment disperses the insoluble dye in an ink composition”. It is the examiner’s position that this phrase fails to satisfy the written description requirement under the cited statute since there does not appear to be a written description requirement of the phrase “the hydrophilic segment disperses the insoluble dye in an ink composition” in the application as originally filed, *In re Wright*, 866 F.2d 422, 9 USPQ2d 1649 (Fed. Cir. 1989) and MPEP 2163.

As support for the above amendment, applicants have pointed to page 4, lines 14-19, page 5, lines 1-3, and page 7, lines 6-11 and 23-25 of the present specification. However, examiner has not found support for the recitation that the hydrophilic segment disperses the insoluble dye. Clarification is requested.

**Claim Rejections - 35 USC § 103**

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1-4 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 1008634.

The rejection is adequately set forth in paragraph 7 of the office action mailed 5/9/05 and is incorporated here by reference.

Further, it is noted that EP 1008634 discloses the use of insoluble dye (paragraph 7).

6. Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spinelli (U.S. 5,772,741) in view of Hosmer (U.S. 6,436,178) and Petersen et al. (U.S. 6,201,099).

The rejection is adequately set forth in paragraph 8 of the office action mailed 5/9/05 and is incorporated here by reference.

Further, it is noted that Spinelli discloses the use of water-insoluble dye (col.2, lines 43-45 and col.4, lines 58-65). Additionally, although there is no explicit disclosure in either Spinelli or Petersen et al. that the star polymer disperses the dye in the ink, given that the combination of Spinelli with Petersen et al. discloses ink as presently claimed including star polymer and dye, it is clear that the star polymer would intrinsically disperse the dye.

### Response to Arguments

7. Applicants' arguments regarding EP 556649, Courian et al. (U.S. 5,874,974), and Coca et al. (U.S. 6,336,966) have been considered but they are moot in view of the discontinuation of the use of these references against the present claims.

8. Applicants' arguments filed 8/9/05 have been fully considered but, with the exception of arguments relating to EP 556649, Courian et al., and Coca et al., they are not persuasive.

Specifically, applicants argue that EP 1008634 is not a relevant reference against the present claims given that EP 1008634 discloses having a star polymer for stabilizing the pigment and does not disclose insoluble dye that is dispersed in water-based ink by amphiphilic star polymer.

Firstly, it is noted that there is no requirement in claims 1-4 and 9, against which EP 1008634 is applied, that the dye that is dispersed in water-based ink by amphiphilic star polymer. Further, it is noted that while EP 1008634 does disclose the use of pigment, the reference also teaches the use of insoluble dye (paragraph 7). Further, there appears to be no disclosure in EP 1008634 that the star polymer is used for stabilizing pigment only. Rather, EP 1008634 discloses that the star polymer is used with both pigment and dye.

Applicants also argue that there is no disclosure in EP 1008634 that the star polymer should have hydrophilic portions extending into aqueous region of the ink. Rather, EP 1008634 teaches away from using such star polymer by stating that minimizing the hydrophilic portions associated with pigment increases waterfastness.

However, this teaching of EP 1008634 is applicable for the use of pigment. There is no such disclosure when dyes, which are also disclosed by EP 1008634 and are presently claimed, are utilized.

Applicants argue that there is no disclosure in Spinelli of amphiphilic heteroarm star polymer and thus, no disclosure that the heteroarm star polymer dispersed dye in the ink.

It is agreed that there is no disclosure in Spinelli of star polymer as presently claimed which is why Spinelli is used in combination with Petersen et al. Although there is no explicit disclosure in either Spinelli or Petersen et al. that the star polymer disperses the dye in the ink, given that the combination of Spinelli with Petersen et al. discloses ink as presently claimed including star polymer and insoluble dye, it is clear that the star polymer would intrinsically disperse the dye.

Applicants also argue that there is no motivation to combine Spinelli with Petersen.

However, it is noted that Spinelli discloses ink comprising water, pigment, dispersant, oil-soluble dye, and acrylic or non-acrylic polymer to improve properties of the ink. However, there is no disclosure of star polymer. Petersen et al. disclose the use of star polymer that possesses narrow molecular weight distribution and exhibits low viscosity at low molecular weight due to its compact structure and high viscosity at high molecular weight due to its extensive entanglement. The motivation for using such star polymer is to produce ink with suitable viscosity for printing, i.e. improve the viscosity of the ink.

Thus, it is the examiner's position that there is proper motivation to combine Spinelli with Petersen et al. and thus, the combination remains relevant against the present claims.

### Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Callie E. Shosho  
Primary Examiner  
Art Unit 1714

CS  
10/28/05